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IS 13171 (1991): Textile Dyestuffs - C.I. Disperse Blue 87
[TXD 7: Textile Sizing and Finishing Materials]

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भारतीय मानक

वस्त्र रंजन सामग्री — सी आई डिसपर्स नीला 87 — विशिष्टि

Indian Standard

TEXTILE DYESTUFFS — C. I. DISPERSE BLUE 87 — SPECIFICATION

UDC 667·2-26 : 677·027·4

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

August 1991

Price Group 2

Dyestuffs Sectional Committee, TXD 17

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards. after the draft finalized by the Dyestuffs Sectional Committee had been approved by the Textile Division Council.

Disperse dyes are extensively used for dyeing and printing of hydrophobic fibres, such as polyester, cellulose acetate, nylon and their blends with other fibres. These have become especially important for polyester fibres as they are widely used as a component of blends with cotton, wool or any other man-made fibres.

The quality of dyeing and printing with disperse dyes depends upon the characteristics of the dyestuff, nature of dispersing agent, nature of carrier used for dyeing and the method and conditions of process employed for dyeing or printing. In order to achieve optimum quality with minimum lot to lot variations and variations in dyeing due to same dye of different manufacturers, it is essential to standardize these dyestuffs. This will also lead to minimize cost benefit ratio and help the user to adjust his dyeing or printing recipes suitably.

C. I. Disperse Blue 87 is used for producing bright greenish blue shades on polyester fibres with good all round fastness properties. This is non-dischargeable dyestuff, but suitable for direct printing of polyester.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of singnificant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILE DYESTUFFS — C. I. DISPERSE BLUE 87 — SPECIFICATION

1 SCOPE

This standard prescribes quality requirements of C. I. Disperse Blue 87 used in textile industry.

NOTE — The dyestuff is basically anthraquinone derivative.

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 IDENTIFICATION

3.1 Solubility

The dye shall be soluble in acetone.

3.2 Action of Sulphuric Acid

On adding concentrated sulphuric acid the dye shall give reddish brown colour. On dilution the colour of solution shall turn blue.

3.3 Action of Sodium Hydroxide (18% *m/m*)

On addition of sodium hydroxide solution, the dye shall give reddish blue colour.

4 PHYSICAL STATE

The dye shall be supplied in the form of a powder mixture containing diluents with a value of dye content as agreed to between the buyer and the seller when tested by the method prescribed in **A-1** of IS 12386 : 1988.

5 STANDARD DYESTUFF

5.1 The standard sample of dyestuff against which the strength of a dyestuff under test is evaluated, shall be as agreed to between the buyer and the seller. The strength of the standard sample of dyestuff shall be assumed to be 100 percent. The strength of the dyestuff under test shall be determined by the method prescribed in IS 12149:1987.

5.2 The standard sample shall be kept in hermetically sealed glass vessels in a dry dark place and shall be replaced by fresh one every year.

6 REQUIREMENTS

6.1 Filtering Capacity Limit of Water Suspension

The filtering capacity limit of a water suspension of the dye shall be 0·6 g/100 ml minimum when measured by the method prescribed in **A-2** of IS 12386 : 1988.

6.2 Chromatography Test

The height of the water suspension shall be at least 55 mm when measured by the method prescribed in **A-3** of IS 12386 : 1988. However, in the phase boundary line, an insignificant zone (strip) is allowed.

6.3 Wettability in Water

The dye shall wet rapidly and spread uniformly in water at room temperature forming an intensely coloured suspension with very little turbidity. At 70°C, the suspension shall be intensely coloured without any turbidity.

6.3.1 The wettability of dye shall be tested by the method prescribed in **A-4** of IS 12386 : 1988.

6.4 Time of Half-Dyeing

The time of half-dyeing of the dye on acetate and polyester fibres, when measured by the method prescribed in **A-5** of IS 12386 : 1988 shall correspond to that of the standard sample of dye.

6.5 Hue of the Dye Powder

When visually examined, the dye shall appear like a uniform powder of charcoal grey to blue black in colour.

6.6 Strength and Tint of Dye

The strength of dye shall correspond to that of standard sample that is, 100 ± 1 percent when tested by the method prescribed in IS 12149:1987. The tint of the dye, when examined visually on dyed yarn specimens, shall correspond to that of the standard sample of dye.

6.7 Colour Fastness Properties

6.7.1 The minimun colour fastness rating of the dye on polyester fibre dyed by the method prescribed in IS 12149 : 1987 shall satisfy the requirements given in Table 1.

7 PACKING AND MARKING

7.1 For smaller packing, the dyestuff in powder form shall be packed in polyethylene bags which shall be sealed and put in rustproof mild steel containers of 0·5 kg to 2·5 kg capacity and having an opening of 7·5 cm or 13·0 cm (circumference). Each container shall be made leakproof by proper

Table 1 Minimum Colour Fastness Ratings of Disperse Blue 87 on Polyester Fibre

[*Clauses* 6.7.1 *and* 8.5(b)]

Percent Dye	Artificial Light	Water	Sea Water	Washing Test 3	Perspiration		Dry Cleaning	Hot Pressing	Rubbing		Carbonising	Dry-heat-Treatment for 30 secds at 0°C		
					Acidic	Alkaline			Dry	Wet		150°C	180°C	210°C
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1·0	7	5 (5)	5 (5)	4-5 (5)	5	5	4-5	3-4 (Gr)	4-5	4-5	4-5	5 (5)	4-5 (3-4)	3-4 (2)
4·0	7	5 (5)	5 (5)	4-5 (5)	5	5	4-5	3-4 (Gr)	4-5	4-5	4-5	5 (5)	4-5 (3-4)	3-4 (2)
6·0	7	5 (5)	5 (5)	4-5 (5)	5	5	4-5	3-4 (Gr)	4-5	4-5	4-5	5 (5)	4-5 (3-4)	3-4 (2)
Method of Test	IS 2454: 1985	IS 767: 1988	IS 690: 1988	IS 764: 1979	IS 971:1983		IS 4802: 1988	IS 689: 1988	IS 766: 1988		IS 11220: 1984	IS 4636 : 1988		

sealing of the end or corners. Each container shall be provided with a temperproof, spillproof and pilferproof sealing so as to avoid adulteration at intermediate stages. Such sealing device may consist of a mild steel ring and a plastic seal to be fitted around the neck of the container after seaming the capseal. The seal may also bear the monogram and the serial number. A suitable number of such containers shall then be packed in wooden cases or HDPE containers lined with cushioning of corrugated paper board/synthetic cushion materials so as to mitigate shock and/or to protect surfaces from abrasion and/or to position an article in a receptacle.

7.2 For medium packing of dyestuff in the range of 25 kg to 200 kg, drums or containers made of HDPE or polypropylene or corrugated fibre board lined with polyethylene or polyester film or with kraft paper combined with thermoplastic adhesives shall be used.

7.3 In cases of packing of dyestuff for export, in addition to the above, the packing shall be such that it meets the requirements laid in the contract and also the requirements of Shipping Corporations (National and International) and the insurance obligations to safeguard against unfortunate incidents. The packing shall be such that it is not damaged during transhipment, air freight or transport and during loading and unloading.

7.4 Each package may also be marked with the following:

a) Name and class of the dyestuff according to colour index,

b) Dye content of dyestuff,

c) Strength of dyestuff,

d) Month and year of manufacture,

e) Indication of source of manufacture, and

f) Gross mass and net mass of each package.

7.5 Each package may also be marked with the Standard Mark.

8 SAMPLING

8.1 Lot

All the packages of the same dye and of the same concentrations delivered to a buyer against one despatch note shall constitute a lot.

8.2 Unless otherwise, agreed to between the buyer and the seller, the number of containers to be selected at random from a lot shall be as given in Table 2.

8.3 For evaluating dye content, strength, tint and hue of dye, the number of packages selected as in col 2 of Table 2 shall constitute the test sample.

Table 2 Sample Size and Criteria for Conformity

(*Clauses* 8.2 *to* 8.5)

Lot Size (Packages)	Sample Size (Packages)	Permissible No. of Non-Conforming (Packages)	Sub-Sample Size (Packages)
(1)	(2)	(3)	(4)
Up to 100	10	1	5
101 to 300	15	1	6
301 to 500	25	2	7
501 t0 800	35	3	8
801 to 1 300	50	4	9
1 301 and above	75	6	10

8.4 For evaluating filtering capacity limit, wettability in water, chromatographic pattern, time of half dyeing and colour fastness ratings, the number of packages selected as in col 4 of Table 2 shall constitute the test sample.

8.5 Criteria for Conformity

The lot shall be declared conforming to the requirements of this Standard if the following conditions are satisfied:

a) The number of packages found non-conforming with respect to strength of dye, tint, dye content, filtering capacity limit, chromatographic pattern and time of half dyeing does not exceed the corresponding number given in col 3 of Table 2.

b) The colour fastness ratings obtained in tests shall satisfy the corresponding requirements given in Table 1.

c) All the test specimens shall satisfy all other requirements specified in this standard.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
689 : 1988	Method for determination of colour fastness of textile materials to hot pressing (*first revision*)
690 : 1988	Method for determination of colour fastness of textile materials to sea water (*first revision*)
764 : 1979	Method for determination of colour fastness of textile materials to washing : Test 3 (*second revision*)
766 : 1988	Method for determination of colour fastness of textile materials to rubbing (*first revision*)
767 : 1988	Method for determination of colour fastness of textile materials to water (*first revision*)
971 : 1983	Method for determination of colour fastness of textile materials to perspiration (*first revision*)
2454 : 1985	Method for determination of colour fastness of textile materials to artificial light (Xenon lamp) (*first revision*)
4636 : 1968	Method for determination of colour fastness of textile materials to dry-heat treatments (excluding pressing) (*first revision*)
4802 : 1988	Method for determination of colour fastness of textile materials to dry-cleaning (*first revision*)
11220 : 1984	Method for determination of colour fastness of disperse dyes on polyester cellulosic fabrics to carborization
12149 : 1987	Method for determination of strength of disperse dyes on polyester by exhaust dyeing
12386 : 1988	Disperse yellow 3 for textile industry

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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